

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of producing oligodendrocytes from mammalian multipotent neural stem cells, comprising:

providing a cell culture of multipotent neural stem cells obtained from neural tissue;

contacting the multipotent neural stem cells with an effective amount of granulocyte-macrophage colony stimulating factor (GM-CSF) ~~at least one oligodendrocyte promoting factor~~ under conditions that result in production of oligodendrocytes from the multipotent neural stem cells,

wherein the ~~GM-CSF -oligodendrocyte promoting factor~~ is selected from the group consisting of human, canine, feline, rodent, sheep, goat, cattle, equine, swine, and non-human primate GM-CSF granulocyte-macrophage colony stimulating factor (GM-CSF), interleukin 3 (IL-3) and interleukin 5 (IL-5).

2. to 5. (Cancelled)

6. (Previously Presented) The method of claim 1 wherein the cell culture is prepared using mammalian brain tissue.

7. (Previously Presented) The method of claim 6 wherein the mammalian brain tissue is obtained from a non embryonic mammal.

8. (Previously Presented) The method of claim 6 wherein the mammalian brain tissue is obtained from an adult mammal.

9. (Previously Presented) The method of claim 6 wherein the brain tissue is obtained from the subventricular zone.

10. to 40. (Cancelled)

41. (New) A method of producing oligodendrocytes from mammalian multipotent neural stem cells, comprising:

providing a cell culture of multipotent neural stem cells obtained from neural tissue;

contacting the multipotent neural stem cells with an effective amount of granulocyte-macrophage colony stimulating factor (GM-CSF) under conditions that result in production of oligodendrocytes from the multipotent neural stem cells, wherein the GM-CSF is at least 80% identical to human GM-CSF.

42. (New) The method of claim 41 wherein the cell culture is prepared using mammalian brain tissue.

43. (New) The method of claim 42 wherein the mammalian brain tissue is obtained from a non-embryonic mammal.

44. (New) The method of claim 42 wherein the mammalian brain tissue is obtained from an adult mammal.

45. (New) The method of claim 42 wherein the brain tissue is obtained from the subventricular zone.

46. (New) A method of producing oligodendrocytes from mammalian multipotent neural stem cells, comprising:

providing a cell culture of multipotent neural stem cells obtained from neural tissue;

contacting the multipotent neural stem cells with an effective amount of granulocyte-macrophage colony stimulating factor (GM-CSF) under conditions that result in production of oligodendrocytes from the multipotent neural stem cells, wherein the GM-CSF is at least 80% identical to mouse GM-CSF.

47. (New) The method of claim 46 wherein the cell culture is prepared using mammalian brain tissue.

48. (New) The method of claim 47 wherein the mammalian brain tissue is obtained from a non-embryonic mammal.

49. (New) The method of claim 47 wherein the mammalian brain tissue is obtained from an adult mammal.

50. (New) The method of claim 47 wherein the brain tissue is obtained from the subventricular zone.